

## NOTES

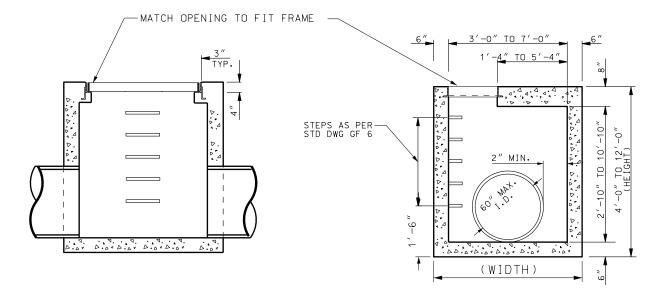
- 1. USE COATED DEFORMED BILLET REINFORCING STEEL BARS CONFORMING TO AASHTO M 284 OR M 111 AND M 31, GRADE 60 RESPECTIVELY.
- 2. USE TYPE II CEMENT (LOW ALKALI).
- 3. PROVIDE  $^{3}\prime_{4}^{\prime\prime}$  CHAMFER ON ALL EXPOSED CONCRETE CORNERS EXCEPT WHERE NOTED OTHERWISE.
- 4. USE CONCRETE CLASS AA(AE).
- 5. PROVIDE MINIMUM 2" COVER FOR ALL REINFORCING STEEL.
- 6. FOR CURB AND GUTTER APPLICATIONS SEE STD DWG CB 1 AND CB 2 FOR BOX ELEVATIONS. INCLUDE CONCRETE QUANTITIES FOR CURB AND GUTTER IN ROADWAY QUANTITIES.
- 7. FOR MANHOLE STEPS SEE STD DWG GF 6.
- 8. USE 8" LONG, # 4 DOWEL BARS @ 8" O.C. MAX. OR EXTEND BOX REBARS 4"INTO THE CURB AND GUTTER, TO ATTACH CURB AND GUTTER TO THE BOX.
- 9. WHEN USING THE BOX AS AN INLET, SET EDGES OF THE BOX TO MATCH PAVEMENT FINISH GRADE AROUND BOX PERIMETER. SET TOP OF BOX SURFACE TO MATCH PAVEMENT CROSS AND LONGITUDINAL SLOPES. RESET ANY BOXES WHERE BOX SURFACE OR GRATE AND FRAME IS NOT FLUSH WITH PAVEMENT. DO NOT EXCEED 1/4" GRATE
- 10. CENTER PIPE IN BOX OPENING, USE NO-SHRINK GROUT TO SEAL OPENING AROUND THE PIPE, OR USE PIPE MANUFACTURER PIPE-BOOT INSTEAD.

## DESIGN DATA

HS 20 OR INTERSTATE ALTERNATE LOADING IN ACCORDANCE WITH AASHTO 17th EDITION SPECIFICATIONS.

STRUCTURAL STEEL: Fy = 36,000 psi

STRUCTURAL CONCRETE: f'c = 4.000 psi fy = 60.000 psi n = 8



SECTION B-B

QUANTITIES

(FOR DESIGN INFORMATION ONLY)

USE THE FOLLOWING EQUATIONS FOR CALCULATING VOLUME OF CONCRETE AND WEIGHT OF STEEL: (ENTER ALL DIMENSIONS IN FEET)

CONCRETE VOLUME

BOX WIDTHS OF 4' TO 8' & DEPTHS OF 4' TO 12'

CONCRETE VOLUME (CU YDS) = (0.037\*WIDTH+0.1853) \*DEPTH+ (0.2161\*WIDTH - 0.2811)

TO CALCULATE VOLUME OF CONCRETE OF PIPE HOLES VOLUME OF HOLES (CU YDS) = 0.0083 \* (PIPE DIAMETER) - 0.0929

WEIGHT OF REINFORCING STEEL

BOX WIDTHS OF 4' UP TO 8' & DEPTHS OF 4' TO 12'

REBAR WEIGHT (LBS) = ( 4.101\*WIDTH + 19.869 ) \* DEPTH + (19.742 \* WIDTH + 15.267)

CATCH BASIN / CLEANOUT BOX

GRATE AND FRAME APPLICATION

SECTION A-A

TRANSPORTATION R 띰 UTAH BASIN BOX ANDARD CATCH AND CLEANOUT S STD DWG CB 5A